vessels and ducts which pass out and in to the rounded mass; the necessary difficulty with which the circulation is carried on, and the bile advanced along the ducts; and, latterly, in a change in the constitution of the nucleated cells themselves, which, instead of being distended with bile containing oil-like globules, contains matter of a darker colour and less oil. The cells may at last contain matter perfectly black, and then the rounded mass assumes the appearance of a melanotic tubercle, the black cells in some instances becoming pyriform and caudate. The author did not state the exact nature of the proximate cause of these various changes in the liver, although he is inclined to believe that the forms of cirrhosis and melanosis are due to the contractile tissue, as a product of inflammatory action more or less acute. The action of remedies, particularly of mercury, would appear to corroborate this opinion. Finally, he concluded, from the observations which he had made on the morbid anatomy of the human liver and kidney, that certain of the diseases of these organs are due to the development of new cells and new matter, within the ducts and nucleated cells of the organs, in accordance with the normal laws of cellular development, this cellular vegetation at last destroying, more or less completely, the natural tissue of the organ.—*Ibid.*

3. *Arrangement of the eighth pair of nerves.*—Mr. SPENCE exhibited to the Med. Chir. Soc. of Edinburgh (April 6, 1842), the preparation and drawings of a dissection of the eighth pair of nerves, showing that all the filaments of the par vagum did not pass the ganglia on that nerve; but that a portion of the vagus could be traced passing over its superior ganglion, and that this portion, after having been joined by the internal root of the spinal accessory, and giving off the pharyngeal branches of the vagus, likewise passed over its second ganglion, and could be traced into the recurrent laryngeal nerve. Mr. S. remarked, that this anatomical arrangement of the nerve satisfactorily accounted for the seemingly anomalous fact, that the vagus, an apparently ganglionic nerve, should send off motor branches, as these dissections showed that it contained motor filaments distinct from the ganglionic portion, and also distinct, for some distance, from the superior filaments of the accessory described by Bendz. He then made some remarks on the experiments of M. Bischoff, Dr. J. Reid, and M. Longet of Paris, to show that these experiments and the anatomy mutually illustrated each other.—*Ibid.*

4. *Singular case of Monstrosity.*—Dr. RODENSTAB, in a communication, entitled Practical Remarks on Labour, published in the "Neue Zeitschrift, fur die Geburtskunde," has given the particulars of the birth of a living monstrosity, without any cranium. The mother was delivered by the forceps. A fortnight after birth, points of ossification were developed in different parts of the head, and at the end of two months, the cranium resembled that of an ordinary newly-born infant. The child, a male, three years old at the date of the report, differs only from other children by the great size of the fontanelle.—*Prov. Med. and Surg. Journ.* May 14, 1842.

5. *Experiments on the Saliva obtained from a man labouring under fistula of the right parotid duct near its extremity.* By Messrs. GARROD and MARSHALL.—*Reactions.*—Tiedemann and Gmelin found it generally slightly alkaline, sometimes neutral, but never acid. Schultz found it acid in the adult when retained in the mouth—alkaline in children. Mitscherlich, who observed it in a case of parotid fistula, found it acid when not eating, alkaline during a meal. Other observers have come to similar conclusions; but most consider that it is capable of varying under very slight circumstances. Messrs. Marshall and Garrod found that between meals the fluid issuing from the fistulous opening, amounting to two or three drops in the quarter of an hour, was always acid, but within half a minute after a morsel had been taken it became neutral, and within the minute alkaline: it soon became strongly alkaline, and remained so till the completion of the meal. About ten minutes after the meal it again became neu-

tral, and acid in about twenty minutes, and remained so till the next meal. The only exceptions were during cough, which, when slight, produced an increased flow of saliva; and it often became neutral for a minute, but soon returned to its acid state. When, however, the cough was long continued, the fluid not only became neutral but even alkaline; but it soon returned to its acid state when the fit of coughing was over.

When the fluid issuing from the fistula was acid, then also blue test-paper became reddened when applied above and below the tongue, and also to the opening of the other parotid duct; and when the fluid was alkaline at the fistula, so were the surfaces above mentioned.

These experiments were repeated many times in the presence of Dr. Sharpey, Mr. Liston, and many other gentlemen, and always with the same results. Once only was the fluid from fistula (during rest) found to be alkaline, and then it was found to be owing to a drop of pus, which, being removed, the acid indication was given.

Reasoning on these facts, and not thinking it probable that a secretion could change from acid to alkaline in so short a time, the more from its not being *excited* by mental emotions only (as the sight of food, &c.) but also by coughing, or motion of the masticating organs, Mr. Garrod endeavoured to explain it otherwise; viz., by supposing that the *acidity* was owing to the mucous secretion of the duct, &c., and that the true saliva was always alkaline. Then, when the saliva is flowing but very slowly, as between meals, &c., the alkalinity of the saliva would not be able to neutralise the acid mucus constantly secreted, and the indication, therefore, would be acid; but when the saliva was excited to an increased flow, this first neutralised, then more than neutralised, the acidity of the mucus, and the indications would be first neutral, then alkaline; and, of course, when the flow of saliva was diminished again, it would pass through the same changes. But it was found that the fluid became alkaline in about a minute, but did not recover its acid state for twenty minutes after the meals. This is also explained by the above theory; for when the saliva is excited, the quantity is so great compared with the mucus, that it soon overpowers it, and for the same reason it would be long in recovering its acidity after the meal was completed.

But is mucus or are all mucous surfaces acid? for to establish this theory it was required to prove this. A four-month fœtus was examined by Mr. Marshall, and it was found that a strong acid indication was given by the mucous membranes of the mouth, nose, anus, and vagina: these, of course, were uninfluenced by the special secretions which vitiate the experiments in the living subject, and which frequently are alkaline, as the tears, &c. The lining membrane of the parotid duct in the sheep was examined, and was found likewise to be acid.

Smoking a pipe in this case did not increase the flow of saliva—only three or four drops of fluid issued from the ducts during the experiment, which was strongly acid. The state of the mouth was examined, yet notwithstanding the alkaline state of the smoke, was found to be intensely acid, and the quantity of the mucus was increased. These experiments seem clearly to prove the acidity of mucus.

Chemical composition.—The alkaline state was not owing to free ammonia, as Schultz asserted; for the fluid, when kept at a high temperature, did not lose its alkaline state: the distilled fluid was not alkaline, and the papers made blue did not recover their redness when exposed to heat. Potassa was not found in the fluid, so it depended probably on free soda.

Sulphocyanogen.—This has been asserted to exist in the saliva by some, but denied by others.

The tests used in the experiments of Messrs. Garrod and Marshall were the action of the per-salts of iron, or the production of sulphuretted hydrogen from the fluid. A sulphocyanide colours the per-salts of iron blood-red; but the acetates, formiates, and meconic acid do the same. But it is found, that when a crystal of corrosive sublimate is added to the fluid, coloured by the sulphocya-

nide, that the colour vanishes. This does not happen with the fluid reddened by the other substances. Heat also destroys the colour of the sulphocyanide for the time; not so with the others.

A piece of pure zinc and sulphuric acid were put into a test-tube; the hydrogen evolved gave no trace of sulphur to lead-paper for half an hour, but when a few drops of healthy saliva were added, the lead-paper became blackened immediately, and the sulphuretted hydrogen was also sensible to the nose.

Great care is required in this experiment to procure the zinc very pure, as sulphur is generally contained in it, and will vitiate the experiment. But this might be owing to the albumen, which contains sulphur as an essential ingredient, or to a soluble sulphuret. To obviate this an alcoholic solution of saliva was made, which could not contain albumen, which also gave the indications of sulphur. It was not owing to a soluble sulphuret, for the alcoholic solution did not blacken lead-paper. Now the sulphuret of lead is black, but the sulphocyanide is of a light yellow colour.

If further proof were wanting of the presence of sulphocyanogen in the saliva, it was found that when the solution ceased to evolve sulphuretted hydrogen, then also it ceased to give the red colour with the per-salts of iron. As no potassa or ammonia was found in the saliva, the sulphocyanogen probably exists in it, as a sulphocyanide of soda. Mr. Garrod then alluded to the experiments of Dr. Davidson, on the absence of sulphocyanogen from the saliva in certain diseases, as pytalism, fevers, &c., and remarked, that during the time the man was under the influence of mercury the sulphocyanogen was almost entirely absent, becoming apparent only by concentration (but the pytalism in this case was slight), and it seemed to return as the pytalism abated; but the operation for the fistula prevented their continuing the experiments. The man was labouring under phthisis also, and perhaps this might reduce the quantity of sulphocyanogen in the saliva.

The quantity of solid matter found in the saliva was 1.7 in 100, it is usually stated to be about 1. in 100; but this increase might be owing to albumen, which was distinctly indicated by means of heat and nitric acid. Albumen is not usually considered one of the constituents of healthy saliva. The quantity of saliva from the fistula was found to be from two to four drachms during a meal, but the man's appetite was not very good. The saliva was found to change a solution of starch, so that it no longer gave the blue colour with iodine. The alcoholic extract of the changed starch was found to have a slightly saccharine taste; so probably a part of the starch was converted into sugar, the rest being only converted into dextrine.

Microscopic characters.—Under the microscope the saliva was found to consist of a clear fluid, containing epithelium scales, small granules, and also true salivary globules, about $\frac{1}{1\frac{1}{2}00}$ inch in diameter. A nucleus was distinctly visible in each when a drop of sulphurous acid was added. This nucleus seems to be situated rather to one side of the globule.—*Lancet*, March 12, 1842.

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6. *Observations on Parasitical growths on living animals.* By Dr. Busk, Esq., Surgeon to the Hospital Ship, Dreadnaught, &c.—The occurrence of parasitical growths, or of organized productions, having a close analogy with some forms of cryptogamic vegetation, upon the surfaces or within the substance of living animals, and in many instances constituting the cause of disease, is a subject of considerable importance in pathology; and although it would be out of place in these pages to enter into the pathological relations of these affections, yet as the microscope has been the means by which the few facts as yet ascertained in this matter have been brought to light, it may not, perhaps, be deemed irrelevant to the object of the Microscopic Journal, to admit a short statement of what has been observed, and thus to bring into one point of view, and attract the attention of microscopists, to a probably not unfertile field of investigation.

1. On the 28th of August, 1832, Mr. Owen read some notes before the Zoological Society on the anatomy of the Flamingo, (*Phœnicopterus ruber*,) in the